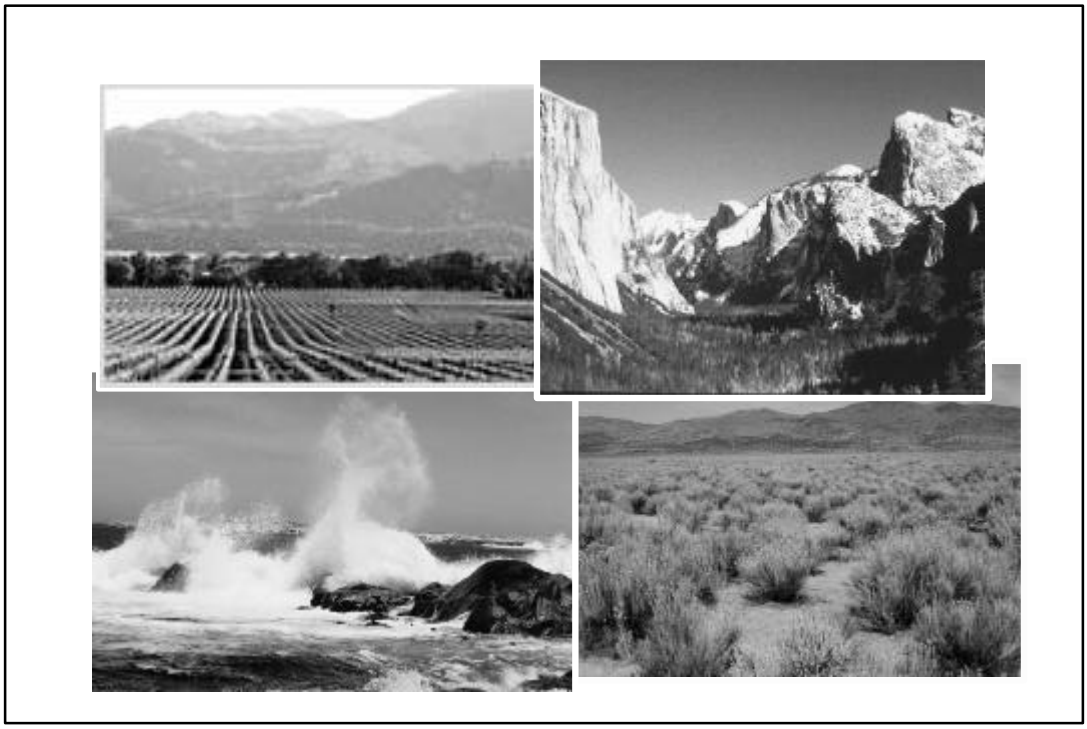
Air Quality & Marine Vessels: The California Perspective

California Environmental Protection Agency

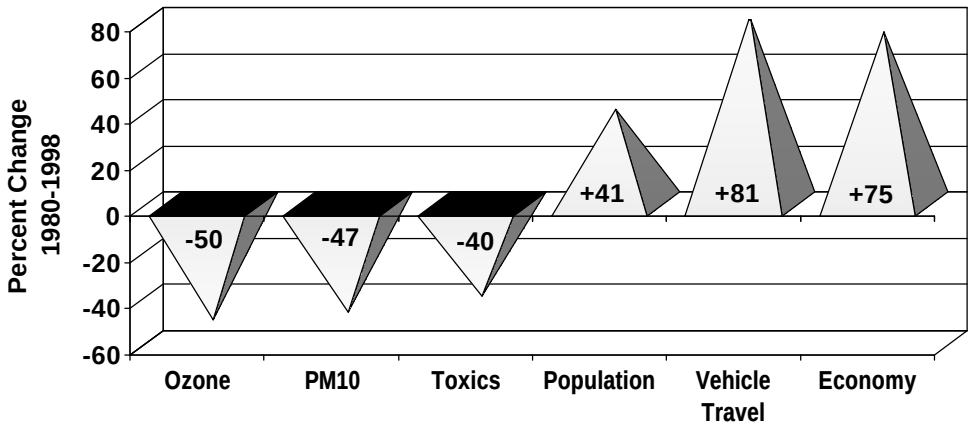
Air Resources Board

Overview

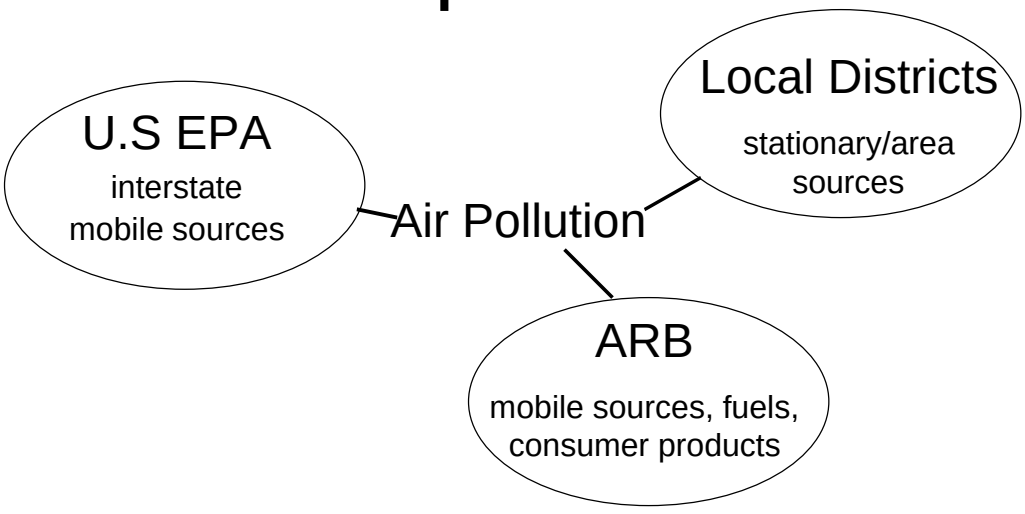
- Air Quality in California
- Air Pollution Control Efforts
- Marine Vessels
- Future Efforts



Air Quality Is Improving...



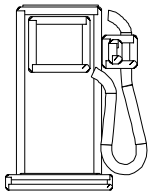
Air Quality Improvement is a Cooperative Effort



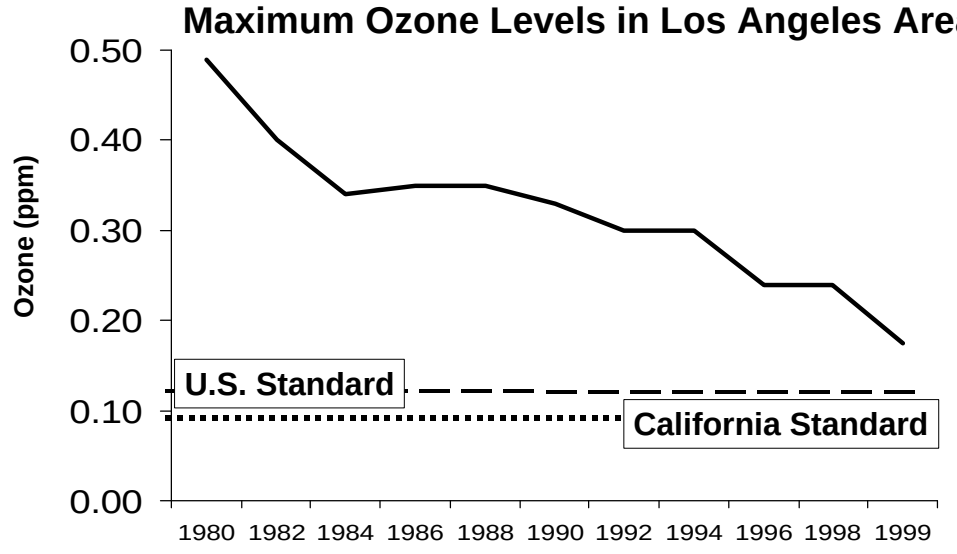
Comprehensive Efforts Have Paid Off

Cleaner:

- **Cars and trucks**
- **Fuels**
- **Industrial sources**
- **Area sources - consumer products, paints, and coatings...**



… But Further Improvement Is Needed



Nonattainment Areas for 1-Hour Ozone Standards

State

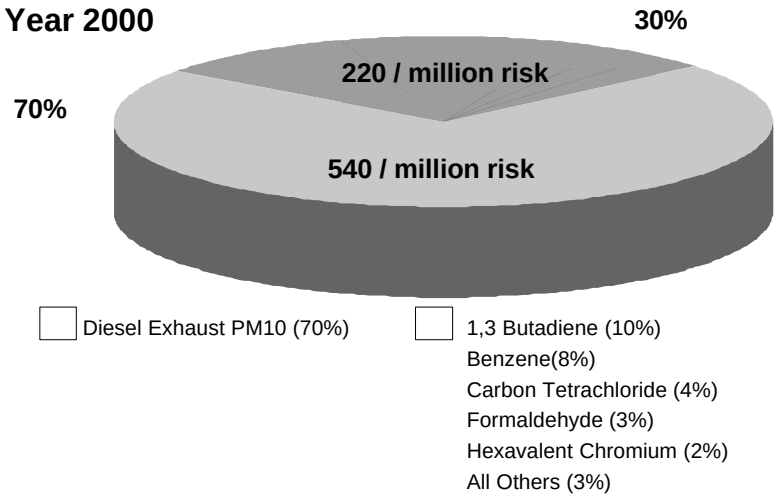
National

Nonattainment Areas for PM_{10} Standards

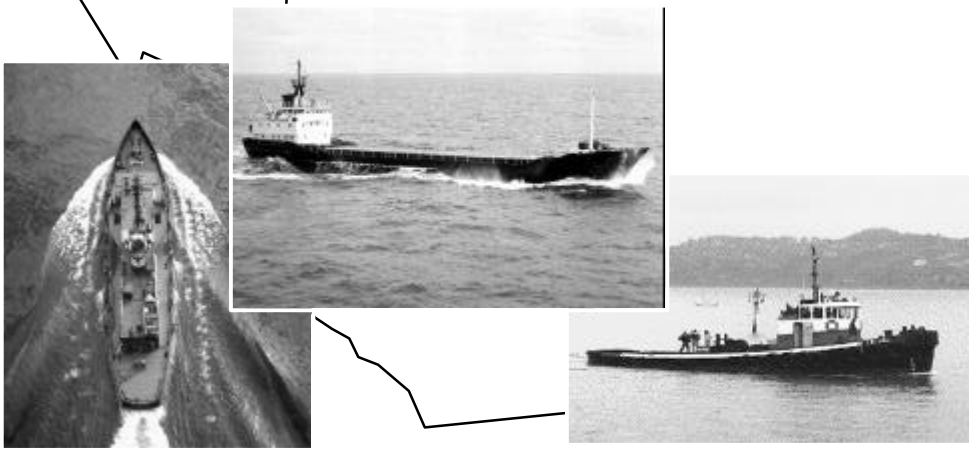
State

National

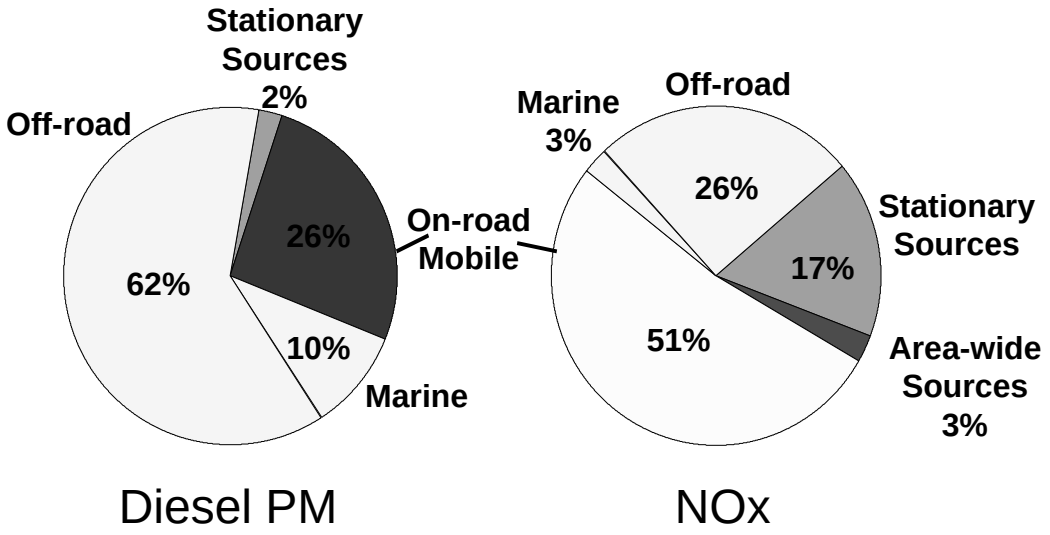
Statewide Air Toxics Risk for Year 2000



How Do Marine Vessels fit into California's Air Quality Picture?



Year 2000 Statewide Diesel PM and NOx Emissions



Regulatory Focus
Commercial Marine Vessels

- **Local districts**
  - Marine loading operations
  - Marine coating operations
  - Permitting auxiliary engines and crew and supply boats
- **State efforts**
  - 1994 Ozone SIP
  - Carl Moyer Program
  - Diesel Risk Reduction Plan

1994 Ozone State Implementation Plan

- Included M-13 "National and International Emission Standards for Marine Vessels"
- Assigned to U.S. EPA
- Focused on marine vessel emissions in the South Coast Air Basin

M-13 Has Implementation Flexibility

- Committed 9 T/D NOx reduction in the South Coast in 2010
- Identified potential controls:
  - International and national engine standards
  - Incentives
  - Operational controls
- Revised 1997 - tonnage commitment increased to 15 T/D; same approach

Progress Has Been Made in Implementing M-13

- IMO and national engine standards adopted
- Federal consultative process
- Conducted comparison of operational strategies
- Tonnage achieved short of goal

Operational Controls

- SIP identified two possible approaches:
  - speed reduction
  - move shipping channel further offshore
- Technical Working Group formed to compare air quality benefits:
  - Used results of tracer study and dispersion modeling to conclude speed reduction provides consistent benefits

Development of Voluntary Speed Reduction MOU

- Initiated by Ports of LA/LB and shipping industry
- Extend existing 12-knot precautionary zone to 20 miles
- On-going discussions regarding implementation and SIP credits
- All parties agree would benefit air quality

Carl Moyer Memorial Air Quality Standards Attainment Program

- Voluntary incentive program to encourage early introduction of cleaner heavy-duty engines
- Implementation began in 1999
- Five districts funding marine vessel projects

Diesel Risk Reduction Plan

- Approved by ARB September 2000
- Requires 75% reduction in diesel PM/risk by 2010
- Expects diesel PM reductions from commercial marine vessels

Clean Air Plan: Strategies for a Healthy Future

- Workshops to explore strategies to control pollutant levels including PM and toxics
- All sources under State and federal jurisdiction will be assessed
- Plan to include near-, mid-, and long-term measures
- Website: www.arb.ca.gov/planning/caplan/caplan.htm

Community Health Concerns

- **What can the marine industry do to help reduce emission impacts?**
  - **Help identify and implement steps to reduce in-port emissions**
  - **Use cleaner fuels**
  - **Help identify and foster retrofit opportunities**
  - **Take advantage of incentive programs**
  - **Encourage lower international and national engine emission standards**

Our Goal Is Clean Air Every Day